05/19/14 Agenda

- Any retake or make ups need to be completed by THIS FRIDAY (5/23)!!!!

- Chapter 10 - Day 1 - Simplifying Radicals & The Pythagorean Theorem

- Homework
  - Worksheet - Day 1 - Simplifying Radicals

Unit 10 Day 1: Simplifying Radicals Name: Date:

In $\sqrt{64}$, the $\sqrt{\ }$ is called the RADICAL (or SQUARE ROOT) and 64 is called the RADICAND

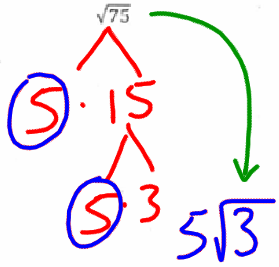
$\sqrt{64}$ = +8 or -8 because... $+8 \cdot +8 = 64$, $-8 \cdot -8 = 64$

** Note: When "simplifying" radicals, we only consider the positive answers! **

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225

SIMPLIFYING RADICALS:

"The Buddy System" - The radical is a house, and numbers only get to leave the house if they have a buddy!



1) Is the number a perfect square?
2) If not, make a factor tree!
3) Looking at the bottoms of the factor tree, circle any "buddies"
4) Buddies get to leave the radical – write the number only ONCE to the left! No buddy? That number is stuck inside the house!
5) Multiply any numbers outside or inside the radical.

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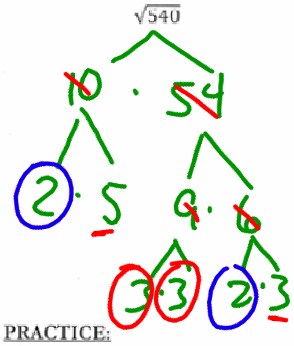

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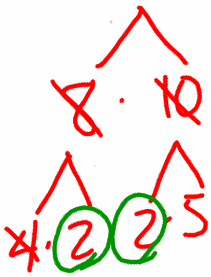
$= 3 \cdot 2\sqrt{5 \cdot 3} = 6\sqrt{15}$

PRACTICE:

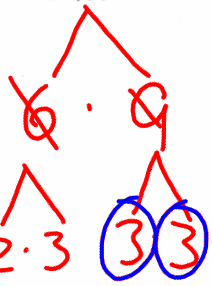
1. $\sqrt{80}$



$2 \cdot 2\sqrt{5}$

$4\sqrt{5}$

2. $\sqrt{54}$



$3\sqrt{2 \cdot 3}$

$3\sqrt{6}$

3. $\sqrt{324}$

4. $\sqrt{210}$

$\sqrt{3 \cdot 7 \cdot 2 \cdot 5}$

$\sqrt{210}$

In $\sqrt{64}$, the $\sqrt{\ }$ is called the RADICAL, (or SQUARE ROOT) and 64 is called the RADICAND.

$\sqrt{64} =$ +8 or −8 because..... $8 \cdot 8 = 64$, $-8 \cdot -8 = 64$

** Note: When "simplifying" radicals, we only consider the **positive** answers! **

SIMPLIFYING RADICALS:

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225

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$\sqrt{75}$

$75 = 5 \cdot 15$

$15 = 5 \cdot 3$

$5\sqrt{3}$

1) Is the number a perfect square?
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$\sqrt{540}$

$540 = 10 \cdot 54$

$10 = 2 \cdot 5$

$54 = 9 \cdot 6$

$6 = 3 \cdot 2$

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5) Multiply any numbers outside or inside the radical.

$3 \cdot 2\sqrt{5 \cdot 3}$

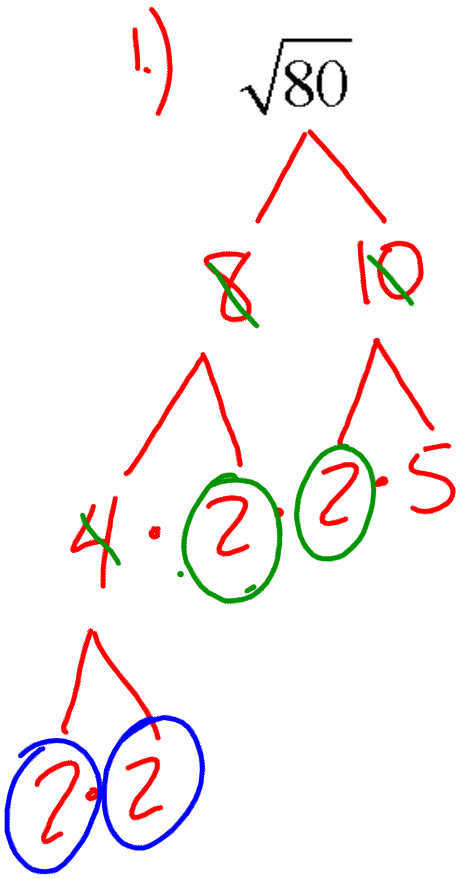
$6\sqrt{15}$

Unit 10 - Day 1 - Simplifying Radicals & Pythagorean Theorem

May 19, 2014

PRACTICE:

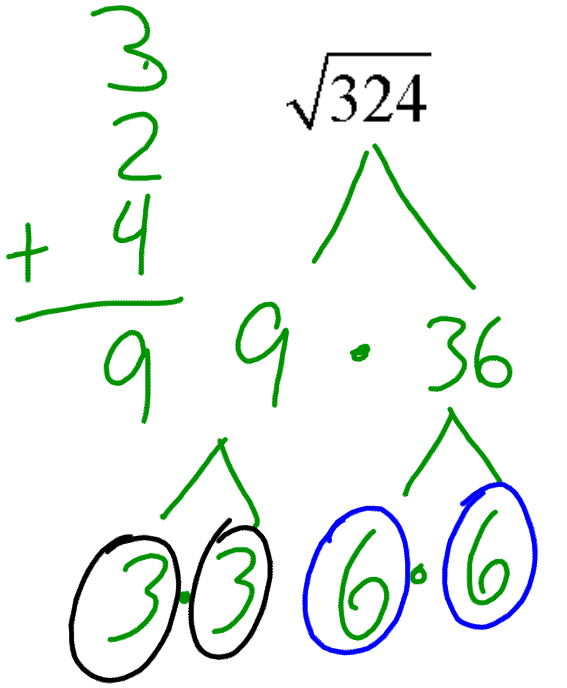
1.) $\sqrt{80}$



$2 \cdot 2\sqrt{5}$

$4\sqrt{5}$

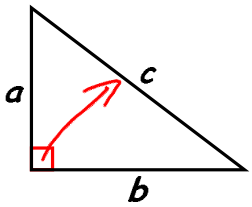
$\sqrt{324}$



$3 \cdot 6 = 18$

The Pythagorean Theorem:

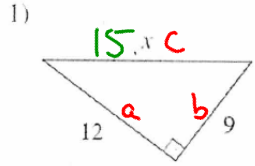
$a^2 + b^2 = c^2$ Only in RIGHT triangles!



a and ***b*** are switchable!

c must be the longest side, across from the right angle (little square)!

1)



$a^2+b^2=c^2$

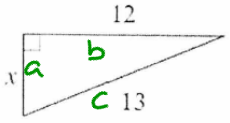
$12^2+9^2=x^2$

$144+81=x^2$

$\sqrt{225}=\sqrt{x^2}$

$15=x$

2)



$a^2+b^2=c^2$

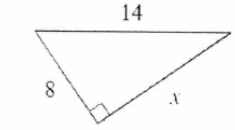
$x^2+12^2=13^2$

$x^2+144=169$

$-144 \quad -144$

$x^2=25$

3)



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